POSITIVE VENTRICULOGRAPHY WITH DIMER-X

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By using of classical pneumoventriculography it is difficult to fill the caudal spaces of the ventricular system, specially the IVth ventricle and Sylvii duct. This requires more often application of the positive ventriculography (2, 3, 4, 6, 7, 8). R. L. Campbell et al. (1964) suggested watersoluble X-rays contrast substances and it was the reason in the recent years the positive ventriculography to be the definite interest of more and more neurosurgeons and neuroradiologists (1, 5, 10, 11, 12).

Dimer-X (60% watersoluble mixture of methylglucamine salt of locarmine acid) is a watersoluble X-rays contrast compound which is suggested for its expressed X-rays contrast properties, specially when applied in the various parts of the brain ventricle system (5, 10, 11). If the technique of injecting of the contrast substance is wrong there is a possibility it (the substance) enters subarachnoidal space and as a result appear certain contorts and other side-effects (9, 13).

Bibliographical data and need for diagnostic practice made us study the application of the positive ventriculography with Dimer-X in our Clinic of Neurology and Neurosurgery, Higher Institute of Medicine, Varna city.

Material and methods

Our clinical-roentgenological material covered 22 patients subjected to ventriculography with Dimer-X in the course of diagnosis. All cases were suspected tumour processes spreading to liquor ducts too. 12 cases were patients with tumours in posterior cranial fossa, 4 — with supratentorial tumours and 5 — with pseudotumours. Only 1 patient had normal ventriculography.

After premedication with atropin (in a dose due to patient's age) and local infiltration in the place of the skin incision with 0,5% novocain solution, a trepanation (typical place: right-front region) is operatively made. After that, 5—10 ml Dimer-X, mixed with equal quantity liquor (aspirated from the ventricle) is injected through a ventricle-needle under X-rays inspection. Patients with heavier case were put on a bed, while those with lighter case — on a chair but with their heads bent forward (down). The head must be slowly moved left, right and forward in order to make intraventricle distribution of the contrast substance easier. 2—3 ml saline solution is additionally injected to lave out the rest contrast from the needle's lumen before taking the needle itself out; in this way the contrast substance will not enter the subarachnoidal space. Several minutes later graphies in three surfaces (projections) are made: frontal-posterior, lateral and posterior-frontal.

Results and discussion

Ventriculographic data of our 22 cases were analysed comparatively with the clinical investigations; as a result 12 tumours in the front-posterior fossa were diagnostically proved. Deformation or insufficient filling of IVth ventricle was established, together with obturation and narrow Sylvii duct. Three cases with hemispherical-cerebellum tumours show a dislocated opposing to the tumour position of the aqueduct in front (facial) projection with a comma-like changed form. 2 cases show a large cyst filling the cavity of the IIIrd ventricle, being insufficiently included by the contrast material. The positive ventriculography shows a ventricle deformation characteristic for hemispherial neoplasma, although there are not enough clinical and angiographical features of supratentorial tumour in some of the cases.

The diagnosis of our 22 cases was verified after operation (15 cases) or autopsy (5). The retrospective comparing of ventriculographies with the rest results and investigation suggests that the positive ventriculography with Dimer-X grants an actual and important information with a definite topic-diagnostical significance. It throws light over the visualizing of various parts of the ventricle system. It is specially applicable to a contrast examination of IIIrd and IVth ventricle and aqueduct. If needed, its combination with a gas ventriculography is easily performed. X-rays pictures illustrate the degree of passability of the liquor ducts; their deformation and dislocation are an indirect sign of the localization of the process. The analysis of the clinical features after ventriculography shows that 21 cases have no complaints of its application. Only 1 of the patient suffered an epyleptiformic contort which was overcome by medical treatment: It appears out that the contrast material had entered the subarachnoidal space (cavity). Our data support the conclusions of J. Handa, H. Handa (1969), M. Finck and H. Vogelsang (1975), Y. Yonekawa et al. (1976), etc. who accept that the epyleptiformic contorts can complicate the situation after an unproper application of the contrast. Therefore, contraindications for ventriculography with Dimer-X must include epyleptic syncopes (faintings) in the past and epyleptic inclination proved by electroencephalography at the moment.

At this stage of our investigation we suggest the ventriculography with Dimer-X to be an important and valuable diagnostic study of patients with suspective brain tumours, specially those located in IIIth and IVrd ventricle, as well as in Sylvii duct. The examination must be carried out by a qualified neurosurgeon in clinical conditions.

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ПОЗИТИВНАЯ ВЕНТРИКУЛОГРАФИЯ С ПОМОЩЬЮ DIMER-X

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РЕЗЮМЕ

Предложенный метод позитивной вентрикулографии с помощью Dimer-X, дающий хорошие результаты, описанные рядом авторов за границей, успешно применен в условиях клиники неврологии и нейрохирургии при ВМИ в г. Варне. Этот метод рекомендуется для применения в практике как ценное диагностическое средство, когда возникают сомнения при диагностицировании мозговых опухолей, в особенности с локализацией в третьем желудочке, в четвертом желудочке и в мозговом водопроводе.